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FROM MY PERSPECTIVE

Will the explosive growth of China continue?

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ABSTRACT

The role of China in the world economy is constantly growing. In particular we observe that it plays more and more important role in the support of the world economic growth (as well as high prices of certain very important commodities). In the meantime the perspectives of the Chinese economy (as well as possible fates of the Chinese society) remain unclear, whereas respective forecasts look rather contradictory. That is why the search for new aspects and modes of analysis of possible development of China turns out to be rather important for the forecasting of global futures. This article employs a combination of scientific methods that imply (a) the analysis at the level of Chinese economic model; (b) the analysis at regional level (at this level the Chinese economic model is compared with the regional East Asian model); (c) the analysis at the global level that relies on the modified world-system approach that allows to answer the question whether China will replace the USA as the global leader. It is important that the analysis is conducted simultaneously in economic, social, demographic, and political dimensions.

As regards the analysis of specific features of the Chinese model as an especial type of the East Asian model (that is based on the export orientation, capital & technology importation, as well as cheap labor force), we note as organic features of the Chinese model the totalitarian power of the Communist Party and the immenseness of resources. As regards special features of the Chinese model, we note (in addition to “cheap ecology” and cheap labor force) and emphasize that China has a multilevel (in a way unique) system of growth driving forces, where, as opposed to developed states, the dominant role belongs not to native private capital, but to state corporations, local authorities and foreign business. This explains the peculiarities of the Chinese investment (or rather overinvestment), which determines high growth rate up to a very significant degree. A unique feature of the Chinese model is the competition of provinces and territories for investments and high growth indicators.

As regards perspectives of the global hegemony of China, we intend to demonstrate that, on the one hand, economic and political positions of China will strengthen in the forthcoming decades, but, on the other hand, China, assuming all possible future success, will be unable to take the USA position in the World System. We believe that in a direct connection with the development of globalization processes the hegemony cycle pattern is likely to come to its end, which will lead to the World System reconfiguration and the emergence of its new structure that will allow the World System to continue its further development without a hegemon.

Finally, the article describes some possible scenarios of the development of China. We demonstrate that China could hardly avoid serious difficulties and critical situations (including those connected with demographic problems); however, there could be different scenarios of how China will deal with the forthcoming crisis. We also come to the conclusion that it would be better for China to achieve a slowdown to moderate growth rates (that would allow China

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to go through the forthcoming complex transition period with less losses) than to try to return at any cost to explosive growth rates attested in the 2000s.

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1. Introduction

The role of China in the world economy is constantly growing. In particular we observe that it plays more and more important roles in the support of the world economic growth (as well as high prices of certain very important commodities). In the meantime the perspectives of the Chinese economy (as well as possible fates of the Chinese society) remain unclear, whereas respective forecasts look rather contradictory. That is why the search for new aspects and modes of analysis of possible development of China turns out to be rather important for the forecasting of global futures. In the meantime, researchers tend not to have an adequate vision of how the world hegemony situation may change as a result. We confront the prevalence of simplified ideas that either the USA will continue the global leadership in the forthcoming decades, or it will be replaced by China in this capacity. Note that this approach implies that the output volume correlates almost perfectly with a state's position in the World System. We do not find the study of the future within this dichotomy fruitful. We believe that in a direct connection with the development of globalization processes the hegemony cycle pattern is likely to come to its end, which will lead to the World System reconfiguration and the emergence of its new structure that will allow the World System to continue its further development without a hegemon.

2. Theoretical framework

In this research we have relied on the following theories and theoretical/methodological approaches:

- 1) World-system approach and the hegemony cycle theory (Wallerstein, 1974, 1980, 1987, 1988, 2003, 2004; Modelski, 1987, 1996; Kennedy, 1987; Thompson, 1988, 2010; Goldstein, 1988; Modelski and Thompson, 1996; Arrighi, 1994; Frank, 1998; Harkavy, 1999; Knutsen, 1999; Friedman and Chase-Dunn, 2005; Chase-Dunn and Anderson, 2005; Korotayev, 2005, 2007; Korotayev et al., 2006; Grinin and Korotayev, 2012; Babones and Chase-Dunn, 2012).
- 2) Theories of Great Divergence and Great Convergence (catch-up) (Gerschenkron, 1952; Solow, 1956; Caselli et al., 1996; Quah, 1996; Bianchi, 1997; Jones, 1997; Lee et al., 1997; Pomeranz, 2000; Islam, 2003; Sala-i-Martin, 2006; Ho, 2006; Epstein et al., 2007; Goldstone, 2008, 2012; Caggiano and Leonida, 2009; Clark, 2008; Sadik, 2008; Allen, 2011; Korotayev et al., 2011a,b; Villaverde and Maza, 2011; Korotayev and de Munck, 2013; Korotayev and Zinkina, 2014; Spence, 2011; Derviş, 2012; Rodrik, 2013).
- 3) Theory of East Asian development model (see, e.g., Berger, 1986; Berger and Hsiao, 1988; Inoue et al., 1993; Ito and Krueger, 1995; Unger and Chan, 1995; Okuda, 1997; Aoki et al., 1997; Lee, 2002; Yusuf et al., 2004; Perkins, 2013); note that the development of East Asian countries in

recent decades provided the most salient examples of the convergence/catch-up processes (see, e.g., Lin, 2003, 2011; Lin et al., 2003; Wong and Goh, 2014).

- 4) The middle income trap theory. As defined by Aiyar et al., the “middle-income trap” is “the phenomenon of hitherto rapidly growing economies stagnating at middle-income levels and failing to graduate into the ranks of high-income countries” (Aiyar et al., 2013: 3; for a detailed description of the factors and mechanisms of the middle income trap see Kharas and Kohli, 2011; see also Kohli and Mukherjee, 2011; The World Bank and the Development Research Center of the State Council of the People's Republic of China, 2012: 12; Cai, 2012).
- 5) Theories of the correlation between political development and economic growth (Barro, 1996; Liew, 2001; United Nations Development Program, 2002; Polterovich and Popov, 2007).
- 6) Scenario methodology (e.g., Wright et al., 2013a,b; O'Brien and Meadows, 2013; MacKay and Tambeau, 2013; Wilkinson et al., 2013).
- 7) Demographic dividend theory (Mason, 2001, 2007; Bloom et al., 2001; Bloom and Sevilla, 2002).

This theoretical framework has conditioned the choice of key variables that we have chosen in order to analyze the development of China – such as GDP, technological innovation rates, labor force, population age and sex structure.

3. Recent trends in the development of China

Every year China is mentioned more and more in mass media and the Internet, which reflects the growing global role of this country. Our perceptions of China do not catch up with its development. Some people admire Chinese progress (see, e.g., Lau et al., 2000; Lin et al., 2003; Lin, 2011), others are frightened of it (e.g., Bernstein and Munro, 1998; Goldstein, 2013), the Chinese phenomenon is used to corroborate various ideas, conceptions and forecasts – ranging from the forthcoming Chinese global hegemony (e.g., Campbell, 2008; Hutchinson, 2013; Mugomba and Bekker, 2013; Kelly, 2014) to the collapse/disintegration of China (e.g., Chang, 2001; Javers, 2009; STRATFOR, 2010: 6).

In the present article we intend to demonstrate that, on the one hand, economic and political positions of China will strengthen in the forthcoming decades, but, on the other hand, China, assuming all possible future success, will be unable to take the USA position in the World System (cf. Grinin and Korotayev, 2011). The present article suggests that the limitations of the Chinese global hegemony are embedded within the model of the Chinese development itself, as a result of which its strengths turn out to be its weaknesses. We will show what the strengths and the defects of modern Chinese model of economic development are; whether it is possible to readjust it. Will the per capita GDP in China be able to reach the Japanese levels in the foreseeable future avoiding the fall into the “middle income

trap”?¹ Why are the Chinese GDP growth rates likely to continue slowing down? And, finally, why does it appear more preferable for China to stabilize its growth rate at a lower level rather than to try to return at any cost explosive growth rate in the 2000s? Finally, the article describes some possible scenarios of the development of China. We demonstrate that China could hardly avoid serious difficulties and critical situations (including those connected with demographic problems); however, there could be different scenarios of how China will deal with the forthcoming crisis.

4. The World System reconfiguration and China

4.1. Forthcoming loss of global leadership by the USA and its possible consequences

Just about 10 years ago possibilities of the Pax Americana emergence were discussed quite seriously (see, e.g., Renwick, 2000; Nye, 2002; Bacevich, 2002). Those projects do not appear to have survived through the past decade that has demonstrated a rather high degree of limitedness of the American might — as well as a pronounced trend toward its decline. The perspectives of the USA way out of its system crisis (including the debt crisis) are rather vague.

Thus, the economic role of the USA (and other “developed”/high-income OECD countries) — as the core of World System — has weakened in a rather substantial way. This role is very likely to experience further weakening in the foreseeable future, whereas the USA’s position as the World System hegemon will diminish (there are plenty of forecasts of the same kind, see, e.g., Frank, 1997; Arrighi, 1994, 2007; Todd, 2003; Buchanan, 2002; Mandelbaum, 2005; National Intelligence Council [NIC], 2008, 2012; for more detail on those forecasts see Grinin and Korotayev, 2010, 2011). And many US experts are very concerned with this (Mandelbaum, 2005; NIC, 2008, 2012).

However, notwithstanding the abovementioned trends toward the decline of the US role and the increase in the significance of China, it appears inappropriate to speak about a mere change of the global hegemon. The world has changed in a very significant way, and this is why we believe that in the forthcoming decades it is highly improbable that a new leader will be a single state (see Grinin, 2012; Grinin and Korotayev, 2010 for more detail). There are two main reasons for this. Firstly, as the USA role diminishes and globalization develops, the World System configuration will follow some other trajectories, some lines of association and integration, so the role of separate states will diminish, but that of their coalitions and alliances will grow (whereas same countries will simultaneously participate in many associations). Secondly, in the foreseeable future the emergence of a state capable of substituting for the USA with its range of leadership functions — from military to ideological ones (Ibid.; see also below) — is impossible, as the United States’ position in this respect is unique. For these (and many other)

reasons the decline of the USA leading role will mean a deep, rather hard and challenging transformation of the World System itself; and even the immediate effects are not clear (for our analysis of these consequences see Grinin and Korotayev, 2010).

4.2. Why is China not America?

Now let us consider what follows from the above statements with respect to an analysis of China’s future place in the World System and in particular, why China cannot be a real candidate to take the number-one slot from the USA. The assumption that China will become such a leader, in fact, proceeds from the current rapid growth which in the next decades will enable it, first, to overtake the USA in GDP, and then to catch up with the developed states in overall production per capita. This means that with its one and a half billion population China will become incredibly powerful.

As a matter of fact such an approach is based on two quite obscure premises:

- 1) the high growth rate could be sustained for a very long time; and
- 2) the production volume correlates with a state’s position in the World System in an almost perfect way.

Actually both premises are wrong. The resources for a rapid growth in China are quite limited (on this see below), and due to many reasons to have the biggest gross product in the world does not at all translate into becoming the World System hegemon.

One of the major factors is that today the political, military, financial, monetary, economic, cultural, technological, innovative and ideological leadership is concentrated in the USA. This mere listing indicates that no one can take the position in the World System similar to that of the USA, as no one can simultaneously put together so many leading functions (see also Zakaria, 2009). What is more — such a position of a state within the World System is unique for the whole of the world history.

Moreover, it is quite obvious, that almost all these aspects of leadership will be inaccessible for China (for some aspects see Fischer, 2010; Herrington, 2011). In particular, China has huge gold and foreign currency reserves, with which it is able to apply certain pressure on the USA in some cases. But the undervalued yuan (renminbi/RMB) and severe regulation of many financial activities will prevent China from becoming the leading financial, not to mention currency, world center. Yes, China pushes the yuan rather actively forward, it arranges currency swaps with its trading partners and declares that in future the RMB will become freely convertible. But is it realistic to expect this for the forthcoming years? We believe that this scenario is not very realistic, because to make the yuan freely convertible into other currencies means to revalue it and to sharply deteriorate export opportunities, i.e. to undermine the foundations of the Chinese growth model and to open the flood-gates to import.

Great Britain in the 19th century or the USSR in the 20th century had ideologies that could be objects of admiration and emulation in other countries, whereas the USA up to the

¹ For more detail on the middle income trap see, e.g., The World Bank and the Development Research Center of the State Council of the People’s Republic of China (2012: 12); Aiyar et al. (2013: 3); Kharas and Kohli (2011); Kohli and Mukherjee (2011); and Cai (2012).

present day have such an ideology that still possesses many elements that attract hundreds of millions in dozens of developing states. And what can China offer the world with respect to ideology? Virtually nothing, as in China itself fewer and fewer people believe in official Chinese Marxism and socialism (see, e.g., Wang, 2010). On the other hand, in China the number of admirers of the Western values obviously increases (see, e.g. Hairong Lai, 2011). The state that is incapable of proposing an attractive ideology to the world and besides fearing revolution in its own country cannot be the world leader.

Below we will also demonstrate that China is rather unlikely to become the World System leader in many other respects – as regards innovations, productivity of labor, level of life, and so on.

5. The Chinese model

Nevertheless, although China is incapable of becoming the World System's valid leader, its rapid development itself appears an influential factor in the near future of that system. The world economy and environment to a large extent depend on how long China will sustain rapid growth and what growth model it will choose. Thus, it is necessary to analyze the main features and peculiarities of the Chinese development pattern, taking into account that China changes rapidly and that the development model remains substantially the same, but the major problems together with the state pass to a new level and continue to accompany this development.

To comprehend the Chinese model, it is worth considering several aspects: what factors generally favored such a rapid and long-lasting growth as well as the rise of Chinese economy's technological level? What reserves underlay the growth and what is their present condition? We will describe the characteristics of the Chinese model in its evolution and then analyze what will hamper the economy growth in short- and long-term perspectives.

5.1. The Chinese model: general features

The Chinese model is highly debatable. Many analysts entirely disclaim its existence, while others consider it almost universal, i.e. suitable for many developing countries (see, e.g., Ramo, 2005; Long and Ping, 2012). The most relevant seems the numerous analysts' opinion which regards it as a variant of the East Asian model of economic development, which in its turn may be considered as a salient example of the convergence ("catch-up") that are constantly growing in strength in the recent decades (e.g., Lin, 2003, 2011; Lin et al., 2003). This model originally emerged in post-war Japan, and then it was implemented in the so-called 'Asian tigers' – South Korea, Taiwan, Singapore, and Hong Kong (see, e.g., Berger, 1986; Berger and Hsiao, 1988; Inoue et al., 1993; Ito and Krueger, 1995; Okuda, 1997; Aoki et al., 1997; Lee, 2002). Later it was adopted by China and to some extent by the ASEAN states (Malaysia, Thailand, Indonesia, the Philippines), and much later – by Vietnam, Cambodia, Laos and some others; that is, this model spread through South East Asia and the Pacific Basin.

Of course, in every country this model acquires rather essential peculiarities (see, e.g., Lau et al., 2000; Breslin, 2011 with respect to China). But its basic features are as follows: a) export-oriented economy (and, especially, export-oriented industry); b) cheap labor force; c) mobilization of foreign investments and creation of favorable business environment, as well as active importing of technology; d) large investment ratio in GDP (very large share of gross fixed capital formation, from 30 to 40% and even more); e) an active (but to a different extent) state participation in economic development; f) also the creation of special economic zones in China and some other countries; g) state authoritarianism in different versions and/or a one-party model – e.g., the development of Japan (and Taiwan) was controlled by one party for a long time – and precisely during the period of the modernization breakthrough. The latter secures a necessary degree of stability to a country during this period.

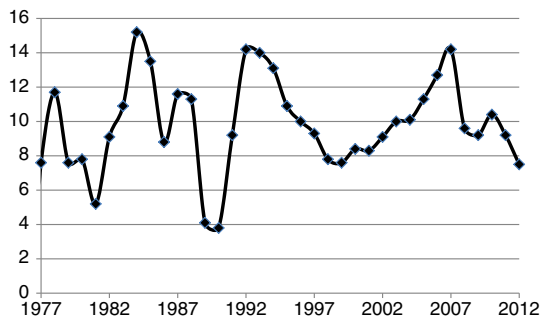
This model – to a larger or lesser extent in different countries – provides a high economic growth rate for a long period, and due to the attraction of capital and investments it makes possible to improve technology and enhance labor productivity. As a result the state is modernized, urbanization rapidly increases, and living standards gradually grow. Nevertheless, with GDP per capita and domestic consumption increase, the growth rate in the states of the East Asian model slows down. The slower development growth gives reason to some analysts to suppose that after China reaches a certain GDP per capita (no more than \$10,000, PPP²), one will observe a much more sizeable slowdown of the economic growth rates in comparison with what observed between 2007 and 2012 (see Fig. 1) (see Eichengreen, 2011).

6. The Chinese model: peculiar features

All the pointed features are intrinsic to the East Asian model, in general, and the Chinese model, in particular. But it also has some very significant peculiar traits. The first (unique) one is the huge population. It is the population (plus large territory and possession of nuclear weapons) that makes China a superpower. The second is the greatest (in comparison with other countries) role of the state with the Communist party at the helm. Its role is crucial in the Chinese model, all the more so because it has made the reforms possible. The third trait is a peculiar position of the peasants who have rather limited land rights (let alone private property of land) and lack many other civil rights. This has allowed using rural resources for the purposes of state and economic growth. The fourth results from ethnically Chinese overseas capital³ and the existence of whole states/special administrative regions with Chinese population (Hong Kong, Macau, Taiwan, and – to some extent – Singapore). No doubt, the foreign investment and technology transmission (e.g., Tsai and Li, 2009) flow to China would have been much smaller, because huge (sometimes most) foreign investments (as well as pseudo-investments) are still channeled this way. Besides it should be noted that the impulse of Hong Kong and

² With the present rates of economic growth China may already reach this level in 2016–2017, i.e. just in 2 or 3 years.

³ The so-called Huáqiáo, that is ethnic Chinese, living in other countries among which there are many businessmen.



Data source: World Bank 2014.

Fig. 1. Dynamics of the annual GDP growth rates in the People's Republic of China, %, 1977–2012. Data source: World Bank, 2014.

Macao integration with China is still felt in the Chinese growth.

These fundamental characteristics of the Chinese model (first of all, the high role of the state together with an obedient population lacking many civil rights) combined with the peculiarities of Chinese reforms and the period favorable for economic growth in the world caused a number of additional significant features which are both the constituents of Chinese success as well as its potential weaknesses, namely:

- 'Cheap ecology' (an insufficient concern for environmental protection);
- cheap social policy which hardly burdens the state (the government can renounce its obligation with respect to old age pensions and allowances for a large segment of the population; fee-paid education and medical service; low industrial safety rate etc.);
- "one child family" policy which reduces expenditures on the coming generation;
- undervalued RMB that supports export. Its low exchange rate prevented China from the 1997 crisis; while a number of other Southeast Asian states suffered significantly from their overrated currencies;
- a very high share of the gross fixed capital formation in GDP that provides the accumulation of capital which allows making solid investments and maintain high growth rate, but is only possible with such an active participation of state in economy as is observed in China;
- deliberate state policy with respect to low energy and raw material tariffs and costs, creation of infrastructure, labor productivity enhancement, innovativeness, degree of state openness etc.

As for the last point it is worth noting the tendency to gradually increase openness for foreign investments — a sphere where China has had the most success (in comparison with its policy of promoting domestic business or developing domestic demand). All these provided the priority rates of Chinese export relative to general economic growth (Harrold, 1995; Chen et al., 1995; Pomfret, 1997; Liu et al., 2002; Shan, 2002; Yueh, 2013), whereas the foreign investment increased tenfold (on the general success of Chinese reforms as well as some difficulties associated with them see Lin et al., 2003; Lin, 2003, 2011; Perkins, 1986, 1988, 2013; Yusuf et al., 2006, etc.).

6.1. Factors, sources and driving forces of Chinese development

Speaking about factors of extraordinary economic growth, first of all one should point to the Chinese leaders' qualifications, as well as the state machine's and whole society's focus on success and growth. The growth in China has really been turned into a fetish. The aforementioned constantly broadening opportunities for foreign and (to a lesser extent) domestic enterprise development deserve attention as particular factors of growth.

Permanent economic growth factors are (as mentioned above): a) extremely high investment rate (in certain years up to 50% of GDP); b) huge foreign capital flow; and c) labor productivity growth. Due to continuous technological modernization one observes impressive development (see, e.g., Perkins, 2013), yet in comparison with developed countries, labor efficiency in China remains quite low.

The most significant sources of Chinese growth were (and more or less still are) as follows: a) large reserves of cheap labor force (that looked inexhaustible for a rather long period of time) and the so-called demographic dividend (connected with a low birth rate and 'young' population structure); b) rather plentiful supplies of some mineral resources (coal, iron ore, oil, rare metals etc.); as well as two sources that we have already mentioned, that is — c) 'cheap ecology' and d) 'cheap' social policy (because of a very low age dependency ratio combined with opportunities to disregard many social needs).

An analysis of driving forces of Chinese economy is of principal importance for the comprehension of the reasons for China's rapid growth and its further development perspectives. In connection with the forthcoming exhaustion of the cheap labor reserves, it may be said that at present China only has three main sources of growth: export orientation, investments (foreign and domestic), and competition between provinces. And, as we will see below, there are evident problems with the continuation of the export orientation as well as the attraction of the foreign investments.

The main agents of investments and production expansion are, firstly, private entrepreneurs. But the role of local entrepreneurs in China is smaller than that in the developed countries, as they have little access to credits and are constrained by many restrictions, while foreign investments enjoy fewer restrictions. Secondly, these are authorities at all levels: from the central government determining the main objectives, rates and costly projects, to the level of provinces (which, however, in terms of population surpass some large European countries), and to the prefectures, counties, and townships. So, there is a multilevel participation of the state (and party) in industrial development and investments. At the same time, at provincial and local levels one can observe a competition for investments and high growth indicators. According to economist John Lee from Sidney these domestic investments give 40% of growth while the export sector and FDI contribute about 30% (see Berthelsen, 2011; Heshmati and Kumbhakar, 2011: 577; Qian and Roland, 1998; Li and Zhou, 2005⁴).

⁴ The roots of this competition may be traced to Mao's attempts to create a certain "parallelism" within the Chinese national economy in order to facilitate the formation of autonomous bases of resistance in case of war (Qian, 1999).

To conceive what the mechanisms for development are, it is extremely important to understand that the Chinese government managed to arouse the internal forces of the local and provincial management apparatus which is very much interested in the economic growth. As a result, the local authorities' impact on the economic development is even larger than it was in the USSR and, in our opinion, is more considerable than in Japan, South Korea, and Taiwan during the previous decades, which brings China additional growth rates. Yet, if one evaluates the central government's role in China and in the abovementioned countries it appears quite similar.

Finally, the functions of a powerful growth engine are performed by large state corporations (including monopolies) aiming at investing their profits in new projects later approved and controlled by the state through credits, etc. In such situation some quite useful projects are combined in a rather fancy way with absolutely ineffective or quite unnecessary ones.

Thus, China has a multilevel (in a unique way) system of growth driving forces, where, as opposed to developed states, the dominant role belongs not to native private capital, but to state corporations, local authorities and foreign business. This explains the peculiarities of Chinese investments.

6.2. Limitations and drawbacks of the Chinese model

The Chinese economy in spite of the fact that its technology and innovative level is increasing, remains generally extensive (e.g., Kuijs, 2012: 7), based on extremely huge resources and capitals involved. At the same time it still remains: a) too resource-intensive; b) too energy-intensive; c) extremely polluting; and d) too much export-oriented. Note also that in the first decades of reforms the investments brought very high returns; however, by the early 2000s the investment effectiveness had declined very substantially (e.g., see Hu Angang, 2005: 38–39). In 2000–2007 China managed to increase the effectiveness of investments, but after the onset of the global crisis it started declining again. Of course, at present this is a global trend; however, in Western countries the volume of investments does not increase (or even declines), whereas in China the problem of the decreasing effectiveness of investments is amplified by the attempts undertaken by the Chinese state to support very high economic growth rates precisely through additional investments whose annual volume in recent years has become close to 50% of the Chinese GDP (or even exceeded it) (ADB, 2012; Yueh, 2013: R4).

So in some crucial points the Chinese model becomes inefficient, which is likely to lead to crises and growth slowdown.

The Chinese leaders are quite aware of the problems of the existing growth model. They continue setting the objectives to transform it and make efforts to do so. Nevertheless, despite a certain progress the results fall short of what must be expected (see, e.g., *The World Bank and the Development Research Center of the State Council of the People's Republic of China*, 2012).

7. Slowdown of the Chinese growth

At present one may observe clear limitations in the way of extremely high economic growth rates of China within its

current model. In the meantime it appears very important to take into account the point that it is very difficult to change such a model; on the other hand, if such attempts are successful, this will imply a rather significant slowdown of the Chinese economy's growth. In 2012 the annual growth rate of the Chinese economy decreased to 7.7% (note that this would still look like a dream for most other economies of the world). In late 2012 and early 2013 this rate somehow increased in a direct relation with the change of the supreme political administration of the People's Republic of China. That is why our point on inevitable slowdown of the Chinese economic growth rates in the near future needs a certain clarification.

As Fig. 1 indicates, in China the annual GDP growth rates reached their peak in 2007, after which they tend to slow down, though they still remain very high. One may suggest that it is the global crisis that is responsible for this slowdown, and the Chinese growth rates will return to the extremely high pre-crisis levels as soon as the global crisis is over. However, there are grounds to maintain that the crisis just accelerated rather logical processes that would have proceeded in any case. On the one hand, within the Chinese growth rate dynamics one appears to observe an evident cyclical component with a period that is rather close to the one of classical Juglar cycles. Actually both Chinese and non-Chinese economists put forward the idea of a special Chinese economic cycle quite long ago (see, e.g., Selishchev and Selishchev, 2004: Chapter 7 for more detail). If the cyclical component continues to be traced in the Chinese economic dynamics, one may suggest that the observed slowdown is still a temporary phenomenon tightly connected with the downswing phase of the respective cycle, whereas one would expect that the Chinese growth rates will become extremely high again at the forthcoming upswing phase. However, we believe that though the cyclical component is very likely to continue to be present in the Chinese economic dynamics, it is as likely to be superimposed over the overall downward trend, and the Chinese annual growth rates will hardly reach two-digit numbers for any significant period of time any more. On the other hand, the process of slowdown will not be monotonous or linear.

As we have already mentioned, we agree with the point that the global positions of China are likely to continue strengthening for a certain period of time in the near future. Yet, this will be accompanied by the slowdown (notwithstanding all the likely fluctuations). And, to our mind, the main intrigue of the future Chinese scenarios is how the Chinese administration (and the Chinese society in general) will react on the inevitability of this slowdown – will China be able to avoid the middle income trap without serious perturbations? Or will it encounter a serious crisis whose social and political consequences might be unpredictable.

8. Growth limits

1. Scarcity of energy resources and raw materials sharply manifests itself as China does not provide itself with energy and raw materials anymore and depends heavily on import. At the same time the increasing import of fuel, mineral and other resources drives the world prices which

raise the cost of Chinese export products. Within the present export-led model the dependence on energy and resources consumption will only increase. Thus, in the near future the scarcity of both Chinese and world resources will become the most severe obstacle to Chinese growth, or the resource prices will turn out to be overwhelming for China.

The growth of the resource consumption may only experience a significant slowdown in case of the slowdown of the economic growth rates (and, most likely, involuntary one) – the statistic results of 2012 indicate just this: the slowdown of the economic growth led to substantial decline of the resource consumption growth.

2. The coming labor shortage and its increasing cost (we will consider these points below – together with the other demographic problems of China).
3. An inevitable appreciation of export production and the risk of capital inflow reduction. Assuming that the export-led model is difficult to change, the severe restrictions like the costs of energy, raw materials, labor, and other expenditures, a probable revaluation of the yuan and rivalry of the states with cheaper labor force will be an obstacle for sustaining export growth. But once growth decelerates, the investment flow will decrease as it is mainly joint ventures with foreign capital participation that are engaged in export. Simultaneously, export capital can go up significantly, which will also lead to a slowdown in economic growth.

In 2012, one could observe the export growth deceleration and reduction of foreign investments. Foreign direct investment in the PRC declined by 3.7%. Moreover, FDI in production fell by 6%. The cause is in the growth of labor's cost, protests against environmental pollution and, perhaps, anti-Japanese sentiments, forcing Japanese companies to move out to other countries. The tendency has continued in early 2013. Then the situation improved again, but in any case we appear to be dealing with precursors of future serious difficulties.

4. The decline of investment returns has already been mentioned above. We would add that the burden of maintaining the unprofitable facilities increases every year. China has an enormous number of excessive facilities almost in all spheres. It is not infrequent that the government forces closures of excessive facilities; nonetheless, their number keeps growing. This results both in unnecessary expenses and excessive competition which reduce profit. Of course, this cannot go on endlessly, and sooner or later the investments will decrease, accompanied by a lower growth rate.
5. Environment. By all accounts the environment degradation is critical (see, e.g., [Steenhof and Fulton, 2007a,b](#); [Angel and Rock, 2009](#); [He, 2010: 158–159](#); [Zitan, 2013](#)). The solution to this problem requires huge funding which will raise the production and export values and affect the growth rate (as has already been observed with the developed countries of the West at a comparable phase of their development [see, e.g., [Korotayev and Bogevolnov, 2010](#); [Korotayev et al., 2010: 53–55](#)]).
6. The increasing social expenditures. Population aging, rising living standards, the necessity to maintain social peace and to prevent the development of an extreme gap

in living standards lead to the growth of the state's civic responsibilities and expenditures. Every year China has to spend more for social needs; that has already had a certain impact, and in medium- and especially in long-term perspectives it will become a heavy burden. The government tries to transfer social expenditures onto employers. On the one hand, it looks quite fair; but, on the other hand, this will naturally lead to the growth of prime costs, and the decrease of the employers' readiness to create new jobs.

Of course, one may say that the majority of developed countries have similar problems. However, one should not forget that, officially, the People's Republic of China is a socialist state, which implies that its government has much higher levels of responsibilities with respect to the country's population in comparison with ordinary developing countries.

The problem of the growth of social expenditures in China may be considered as one of the factors that could cause China to find itself in the middle income trap, as the growth of social expenditures will lead to an increase of the prime costs of the Chinese products, which may negatively affect the export potential of this country, as well as facilitate the competition of imports for the Chinese internal market.

7. The danger of inflation, growing disproportions and the necessity to restrain the inequality development have a severe impact on economic policy and growth rate. China has an abnormally high Gini coefficient (see [Yu, 2013](#)).⁵ In March 2011, the Chinese Premier Wen Jiabao declared that the combination of inflation, corruption and income disparity between rich and poor can influence social stability and even political power strength. Thus, the most important resource of the Chinese model – people loyalty – is challenged.

9. Demographic problems

Despite high absolute numbers of the unemployed, one can already observe labor shortages in many places. It is forecasted that after 2015 the labor force deficit will be gradually increasing—reaching the annual rate of 10 million; as a result between 2015 and 2035 the working age population of China will shrink by 115 million (see, e.g., [NIC, 2012: 15](#); [Akaev et al., 2013: Chapter 12](#)). There are still quite large numbers of excessive working hands in the countryside; however, the system of hukou (registration) impedes the free movement of villagers to the cities. On the other hand, the fast growth of the urban population due to the migration from the countryside (that is still very likely in the forthcoming years) will imply a very fast growth of expenditures to support health care, education and pension systems (which is hardly compatible with the Chinese model of “cheap population”).

⁵ The Gini coefficient (a measure of income inequality) is very high in China. It is higher than in Russia, India and the USA and yields only to countries of Latin America and South Africa, though according to some reports it has already overtaken some of them and reached 0.57 (see, e.g., [Berthelsen, 2011](#)).

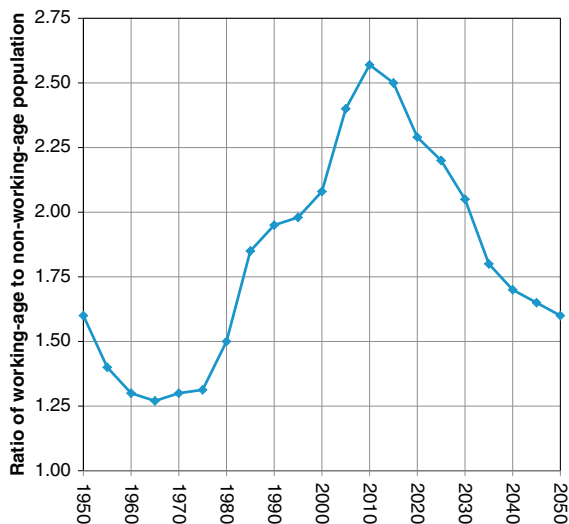
A rather sharp labor force deficit will only be felt in the medium-term perspective; however, any decrease of the surplus labor force will affect positively the wage dynamics tending to lead to the increase in their levels as well as in the levels of the workers' demands. With a limited labor force and wage-push, it will be very difficult (or just unlikely) to maintain very high growth rates. As Fig. 2 suggests, China is about to stop receiving its “demographic bonus”, and in the forthcoming years the transformation of the age structure will start working in the opposite direction. Indeed, a very sharp decrease of the age dependency ratio was achieved in recent decades due to an accelerated completion of the demographic transition in a direct connection with a fast decrease in the fertility rates produced largely by the “one child family” policy. However, the process of the decrease of the share of the under-15 age cohort in the total population of China has already reached its limit. In the meantime this is accompanied by an accelerating increase in the retirement age population cohorts.

The growing pension load will place a heavy burden on the Chinese economy, and, against the background of the slowdown of the economic growth rates, any fashionable saving scheme will hardly be able to lift significantly the resultant burden on the state budget.

Another very important problem is the disbalance of males and females in the total population of China. The deficit of brides for dozens of million young males (see Figs. 3 and 4) may become a serious social problem and a powerful source of social discontent.

Consider two estimates of the dynamics of that disbalance by various authors.

It appears necessary to take into account the point that it will be impossible to smooth the action of the gender disproportion factor among the adult population up to the 2040s even if China abandons entirely the “one child family” policy in 2015 (see, e.g., Akaev et al., 2013: Chapter 12).



Data source: UN Population Division 2014.

Fig. 2. The ratio of the working age population to “dependents” (people younger than 15 or older than 64). Data source: UN Population Division, 2014.

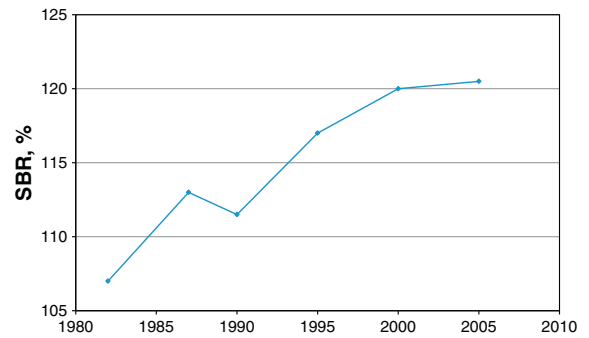


Fig. 3. The ratio of newborn males to newborn females (the number of newborn boys per 100 newborn girls = sex ratio at birth = SRB). Source: Golley and Tyers, 2012: 28.

Consequently, in forthcoming decades one will find a huge and constantly growing group of dissatisfied people comprising precisely that very part of the population – young males – that is the most prone to violence, radicalism, and extremism (see, e.g., Moller, 1968; Goldstone, 1991, 2002: 11–12; Korotayev and Zinkina, 2011a,b; Korotayev et al., 2011a,b).

10. The inevitability of the growth slowdown

10.1. Why is the growth model difficult to change?

The modern expensive model for growth increases the existing and officially recognized disparity in development level and living standards between the eastern and western provinces, the urban and rural populations, and the rich and poor Chinese. No wonder, that the Chinese government's objective is to direct the economy toward innovative growth and to enhance the contribution of knowledge economy to the GDP growth; to develop Chinese know-how and high-technology export; to increase domestic consumption and make it (not foreign trade) the fundament for growth; to lower coefficients of energy and raw material consumption; to improve environmental conditions; to balance economy; and so on. But this new course, designed in the late 1990s appeared to be not quite realistic.

In short, to change the existing growth model is difficult both due to the inertia and to the existence of influential forces interested in its conserving and high growth rates. As we have stated above, these are local authorities of different levels, especially those of rich provinces, and large state or quasi-state corporations (about state corporations' peculiarities and their role see Hu, 2013). For decades they have made great progress in production expansion as well as in statistic figure manipulation. On the other hand, the supreme administration of the People's Republic of China has not really abandoned the idea to support the very high economic growth rates at any cost. Notwithstanding the declared plan target of 7% of annual economic growth in the period of the 12th 5-year plan, the new administration does everything it can in order to exceed this number. No less important factor is that Chinese bureaucratic and social system is actually unprepared to switch to a new organization. For example, how can one avoid overinvestment that creates additional

excessive capacities each year, if this results from provinces' rivalry for capital and rapid pace of their region's development? The only instrument is the restrictive directives. But this means to tie the provinces' hands, and, in fact, to stop the leading growth engine (irrespective of all its irrational aspects).

In general, with the account of the above-mentioned limitations it appears reasonable to mention that despite all the Chinese authorities' efforts, in the short-term perspective the most possible scenario seems to be the one forecasting a significant deceleration of the growth rate to 5–6% in the next five years. And further, that is after 2016, the growth rate will decrease more. It is quite possible that China will face more serious challenges, especially amid the deteriorating economic environment in developed states and if the world demand for Chinese products decreases (Europe and the USA are its major consumers).

11. Can a developing state be the World System economic leader?

However, consider first the most optimistic scenario of the development of China (note that with this scenario China is supposed to display an extremely high growth rate and thus surpass the USA in GDP within the next decade). What does this mean for China and the world? Will this mean that this economic superpower with the largest GDP in the world will become the World System hegemon. We believe, not. Anyway, today and in the foreseeable future China has no sufficient opportunities for that. Why? Due to a few reasons, some of which will be spelled out by us below.

1. A rather high degree of dependence of the Chinese economy. One should keep in mind that the dynamics, power and progress of Chinese industry are still in many respects connected with other (and richer as regards their per capita GDP) economies.
2. It is impossible to become a World System hegemon, while still remaining a developing country. And China describes itself as a developing state. And that is not mere rhetoric or just an attempt to gain some benefits from the WTO. It is really so. When will the developing country become a developed one? Even according to the Chinese government plans it will happen in a rather distant future. Meanwhile, an economic leader should display a high GDP per capita, a high level of productivity and incomes. It is very doubtful that in the near future China will enter the top ten with respect to those indicators.
3. China will be still subjected to criticism for human rights observance as well as for the environmental issues.
4. With the world's largest GDP China will become a very powerful state (still remaining a poor society) that can influence some global economic and financial trends, including exports of capital, raw material flows, investments abroad, financial support for the least developed countries, and so on. China is capable of turning into a rather mighty military power (though not the first rate one), play a noticeable role in important global economic decision-making. China's significance in the Pacific Basin, especially in East and South-East Asia, will increase. All the above-mentioned are of great importance, but it is not the same as holding the World System leader position.

The status of an economic superpower, of course, will stimulate political and diplomatic activity to support its own position, to defend the rights, property, etc. But for a long period of time China will focus on its complicated internal problems. It will still consider all external affairs in the light of the domestic ones, estimating whether it will provide economic growth, resource supply and so on (see, e.g., Fischer, 2010). In this respect the Chinese position resembles that of the USA in the late 19th–early 20th centuries with its policy of isolationism at the time of booming economic growth. Such a comparison can help answer the question if China will manage to take the USA path and become the World System leader. But the comparison reveals quite fundamental distinctions:

1. Not yet laying claim to leadership, the USA in the late 19th century became the leading economic power, having gone ahead of Great Britain and Germany as regards its GDP, and having caught up with Britain as regards its GDP per capita.
2. Labor productivity in the USA was very high, in some respects the highest one in the world (due to labor shortage – the case opposite to the Chinese one). (On the low labor productivity in China (especially in agriculture) see, e.g., Akaev et al., 2013).
3. The USA was generally recognized as an innovative leader in technology and management at the beginning of the 20th century (Frederick Taylor's Principles of Scientific Management, Henry Ford's assembly line, etc.) and even earlier in some respects. As to China's economy, it develops on the base of non-innovative and even outdated technologies. On the other hand, in recent years China has achieved a rather significant progress in this field (e.g., Kim et al., 2009; Ma et al., 2009; Hu and Phillips, 2011; Zhang and Gao, 2011; Lai et al., 2012; Chen et al., 2012; Xiang et al., 2013; Motoyama et al., 2014; Fuller, 2014 TFS^{***}). Today China ranks third in the world in terms of the number of patents; in addition, China's output of research articles has expanded in a very significant way (Kostoff et al., 2007a,b,c; Kostoff, 2012); a very high number of patent grants attested in the recent years in China is very important; yet, a rather pronounced accelerating dynamics is of no less importance (see, e.g., Liu and Sun, 2009; Tseng, 2009; The World Bank..., 2012: 177; Boeing and Sandner, 2011: 17; WIPO, 2014; see also Fig. 5). However, there significant obstacles in this way (e.g., Miller et al., 2011), and economy generally remains non-innovative (Zhang et al., 2012).
4. Low wages is the fundamental aspect of the Chinese rapid growth model. Meanwhile, in the USA in the late 19th century (in fact, since its foundation) the wages were significantly higher than in Europe, which stimulated the flow of immigrants.
5. The USA economy (in contrast with the economy of China) has never been export-oriented (see, e.g., Held et al., 1999).⁶

In addition, one may mention the British ascendance to the World System hegemony in the late 18th and early 19th

⁶ With the exception of the antebellum slave-owning Southern States of the US.

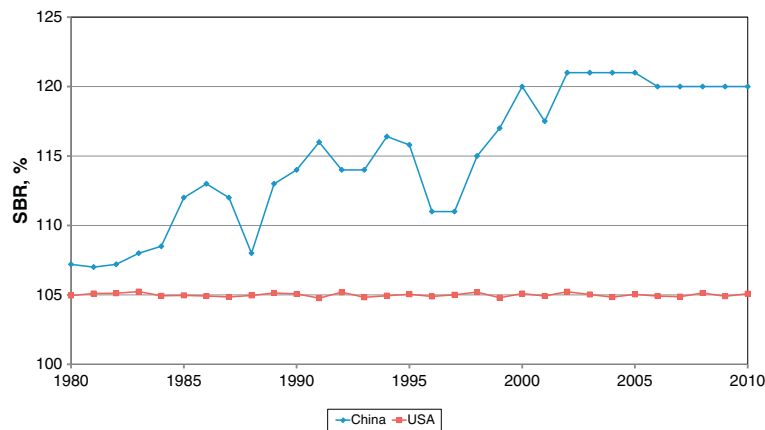


Fig. 4. The ratio of newborn males to newborn females (the number of newborn boys per 100 newborn girls = sex ratio at birth = SRB) in China, version 2 (compared with the USA). Source: Poston et al., 2011: 316.

centuries. The military power of Britain did not surpass the one of France; and up to the 1820s the British GDP was smaller than the GDP of France (and, incidentally, China); the foundation for the British global hegemony was laid by the technological breakthrough in connection with the industrial revolution.

Finally, history allows drawing one more conclusion. Economic might does not automatically transform into political hegemony. The USA after a short outburst of geopolitical activity between 1917 and 1920 returned to its traditional isolationism and even in the late 1930s the USA still unwillingly engaged with European policy, maintaining neutrality during the civil war in Spain and ignoring the war between Japan and China, and so on. Only the Japanese attack on Pearl Harbor finally changed the situation. However, for the present we can hardly believe that in the nearest decades the world will find itself in the situation to propose the leader position to China.

12. An attempt of long-term forecasting

Consider various scenarios of the future development of China. Of course, at present it appears impossible to describe

the course and duration of the crisis whose start, from our point of view can still be expected by the end of this decade – or the beginning of the next – if, of course, the Chinese leadership fails to work out and implement the optimum development strategy. Thus, it appears reasonable to suggest some tentative scenarios.

The optimistic scenario implies that the Chinese economy after the slowdown of its growth still retains such growth rates that are higher than in the USA. In this case China will outstrip the USA in this decade, or the beginning of the next. This scenario will be discussed in more detail later. At this point we will just mention that we do not consider this scenario to be the most probable due to the formidability of problems that we have described above.

As we have already mentioned in the beginning, the worst scenarios suggested by some analysts predict disintegration of China (or even rebellions and civil wars). Such scenarios are not without certain grounds. In particular, one should not forget that China includes vast territories with non-Chinese population, whereas the colloquial Chinese is actually a conglomerate of a few closely related Sinitic languages united by a single writing system. In addition, there are marked differences between more market-oriented (and – currently – much richer) coastal provinces and more state-oriented (and poorer) inland areas (especially in the Yellow River basin). Thus, a certain threat of the decline of the country's unity does exist. However, throughout the very long history of China the unity of the Chinese nation tended to prevail over division and disintegration, which suggests that the scenarios forecasting the preservation of the country's unity are more realistic (especially, against the background of still fresh memories of the disastrous civil war).

We have to leave aside numerous intermediate variants and to concentrate on just one of the possible scenarios of the Chinese crisis, the one that we consider to be the most probable. Within this scenario the Chinese GDP may still become the largest in the world. Yet, this scenario will be connected with the growing problems in the way of the future development of China. China possesses immense resources, a great safety margin, and a considerable experience of solving very difficult problems. All these are very

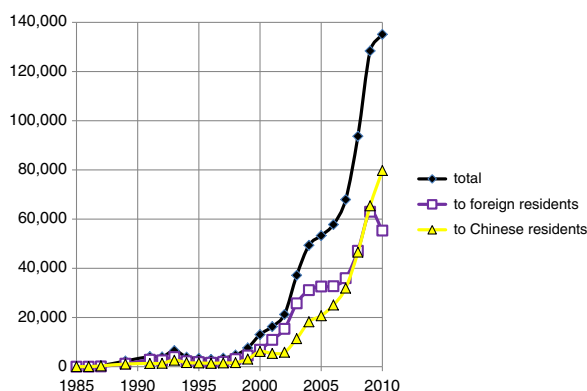


Fig. 5. Dynamics of the number of patents granted in the PRC, 1985–2010.

likely to allow China to solve forthcoming difficulties for a certain period of time. However, if the main efforts of the Chinese administration are aimed at the supporting of the current very high growth rates at any cost (which would result in the postponement of the solving of many medium-term and long-term problems), this may lead to a very serious structural socioeconomic (and even political) crisis in China.

The necessity to reform the political system of China may constitute the most serious threat. There is a significant contradiction here that could hardly be eliminated. On the one hand, the satisfactory solving of the problems is only possible with the continuation of the dominance of the Communist Party of China. On the other hand, China's political system which has greatly contributed to its success will be more and more frequently criticized at home and abroad. The criticism will intensify coupled with growing living standards and middle class population. The transition from authoritarianism to democracy is not only problematic but also very dangerous and can cause destabilization, extension of populism and the country's disintegration (in this respect, the USSR is a very instructive example). Nevertheless, it is quite possible that some circumstances, social expectations or internal political struggle (combined with outside pressure) will make leaders take that direction. The fact that the Chinese people have never lived under democracy can lead to a severe government crisis and affect economic development.⁷ With the weakening of the Communist Party of China one may expect developments rather similar to the ones observed during the Russian crisis of the 1990s: criminalization of political power, disbalances in the state policy, concentration on momentary tasks, renunciation of the earlier goals of economic growth, which is very likely to lead to the economic decay.

Such a crisis may continue for 15–20 years (as China may need a change of generations in order to unravel the tangle of accumulated contradictions and problems). On the basis of the experience of many post-Communist countries (including Russia) one can observe that such a crisis may be very difficult to overcome. The slowdown of the economic growth will naturally lead to the slowdown of the growth of the level of life of the majority of the Chinese population (or even its decline for a certain period of time). The attempts to influence this will affect the situation both positively and negatively – especially, as regards the financial sphere leading to mass bankruptcies, financial frauds, and growing disproportions in a direct connection with all these. The possible structural crisis in China is also very likely to be accompanied by the growth of criminalization and increasing property grabs. The weakening of the growth impulse (combined with the growing negative phenomena in economic and social spheres) may lead to fluctuations in the upper levels of the political administrations, as well as to the increasing intensity of political intrigues. Within such a context one could also expect fluctuations of attitudes toward private entrepreneurship, increasing confrontation

between bureaucrats and businessmen (who are now tightly connected by the urge toward the growth and expansion), and sharp oscillations in social policy.

The crisis may last for the 2020s and 2030s; on the other hand, the sliding down into the crisis may continue for a rather long time (for example, for the 2020s till all the possibilities for growth are exhausted) – in this case the crisis may start in the 2030s (when, as a result of the exhaustion of economic and demographic resources, the political power will weaken, and the opposition will grow in strength) and continue in the 2040s. Such a scenario looks even more plausible.

13. Conclusion

Thus, what is the answer to the question placed in the title of this article? Will the explosive growth of China continue? We believe we have given a rather unequivocal answer to this question. The explosive growth of China is bound to come to its end. On the other hand, there is no unambiguous answer to the question of the possible outcomes of such a transformation. Here, one of the main problems is connected to the point that sooner or later China will face the necessity to change its political system.⁸ At this point China will face a very serious threat. Will China be able to pass this threshold without deep shocks? This will depend on the shape in which China will approach this point, on how controllable it will be, as well as on the possibilities to reform the political system gradually.

In this respect it appears appropriate to discuss two possible alternatives. The first would correspond to such a scenario when the Chinese administration is unable to modify sufficiently the economic model, when it tries to support the extremely high growth rates (which seem to legitimize the Chinese leadership) at any cost. This is the “hard landing” scenario that will lead to the increasing malfunction of the economic “machine” of China. Sooner or later the moment will come when the citizens' expectations exceed too much the government's possibilities, and its authority will be shaken. If the Communist Party continues to be considered responsible for everything, if it continues not to have any realistic alternative, if citizens continue to believe that all their problems stem from the bad government, then there will be a really high probability of the country's rolling into a very serious and prolonged sociopolitical crisis.

The second scenario may be called not just one of the “soft landing”, but rather one of planned and coordinated restructuring of the Chinese economic and political model. This scenario will only become plausible if the Chinese leadership realizes that political relationships in a society that has achieved a certain level of the well-being are bound to be changed (as they changed in South Korea, in Taiwan and other successful Asian societies). And the more prolonged and softer changes are, the lighter the transition will be. We believe that a steady, organized, and planned slowdown of the economic growth may transform the

⁷ We agree with those researchers who point out that “the transition period to democratic governance is one of the most unstable and tenuous periods a state can experience” (Cox et al., 2009: 34; see also, e.g., Goldstone et al., 2010; Herrington, 2011).

⁸ Some hints that the new Chinese leadership still recognizes the necessity of profound reforms, in general, and political reforms in particular may be also found in the “inauguration speech” (as well as some other speeches) of the new Chairman of the Communist Party of China, Xi Jinping.

present-day Chinese takeoff into a smooth and steady growth with slower rates. Within such a scenario we would consider as a great success the annual per capita GDP growth rate of 4–5% being achieved for a considerable number of years. Note that such a slowdown of economic growth rates may produce a number of positive effects, contributing to the elimination of those disproportions that were accumulated during the years of explosive growth.

Such a smooth growth will be able to secure China's escape from the medium income trap, whereas the released energy could be used by the Chinese administration to prepare and perform in a smooth way sociopolitical changes while retaining a necessary degree of control. As we have demonstrated above, China does not have sufficient reserves to support extremely high growth rates. But we believe that it has sufficient reserves in order to solve a very complicated task of the necessary deep transformation of its development model. And the earlier this transformation will start the more chances will China have to avoid “the hard landing”. Planned and gradual slowdown of the growth rates will allow the country to preserve its stability, whereas the main portion of the economic growth will take place through the expansion of the internal demand of households. This will be accompanied by the growth of the cultural level of the population and the increase in the effectiveness of legal mechanisms of economic regulation with a possible growth of the significance of local businessmen. This will also allow a rather safe introduction of certain elements of democracy (that can well be a sort of “controllable democracy” in the beginning).

It does not appear appropriate to provide here a detailed description of a planned restructuring of the Chinese economic model. Note that in the forthcoming three decades (as we have already mentioned above) the transition of China to the innovation-intensive trajectory may be (paradoxically) facilitated in a rather significant way the inevitable colossal (by more than 100 million) decline of the Chinese working-age population. This will be a very powerful factor decreasing the threat of unemployment, as well as a major stimulus to increase the productivity of labor (which actually implies the growth of incomes that will tend to stimulate the expansion of the internal demand). The decrease of the labor force in China may also help this country to solve finally the problem of an extremely low labor productivity in the Chinese agriculture — behind which one could easily find a very low level of incomes of the Chinese peasants (who not so long ago constituted the majority of population of this country), and, hence, a very narrow internal market (at which one had no chance to sell the output of the vigorously growing Chinese industry, whereas this created its heavy dependence on exports). The rise of Chinese agriculture and the growth of farmers' well-being will contribute to the broadening of the internal market and will help the Chinese industry to overcome its acute dependence on the external markets. In addition, the transition of China to the model of growth through the expansion of internal demand will finally allow to decrease the level of economic inequality that has reached in China colossal scale⁹ and that can serve as a very

powerful potential source of political destabilization in a country where the Communist ideals of universal equality are still formally dominant.

Of course, the opposite side of the increase in the population incomes will be the growth of the price of the Chinese workforce — which will result in the decline of the competitiveness of many items of the Chinese export (and, hence, in the decrease of the country's attractiveness for foreign investors). Naturally, the “soft landing” scenario also implies certain risks (as it may even lead to a certain decline of production, which may result in serious tensions within the Chinese socioeconomic system that has become so “accustomed” to vary fast economic growth rates). However, this is the lesser of two evils.

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References

- ADB (Asian Development Bank), 2012. Key Indicators for Asia and the Pacific 2012 URL: <http://www.adb.org/publications/key-indicators-asia-and-pacific-2012>.
- Aiyar, S., Duval, R., Puy, D., Wu, Y., Zhang, L., 2013. Growth Slowdowns and the Middle-Income Trap. IMF Working Paper WP/13/71. International Monetary Fund.
- Анйган, Ху, 2005. 3. Чем объясняются высокие темпы развития китайской экономики? Проблемы Дальнего Востока 1, 34–42.
- Akaev, A., Korotayev, A., Malkov, S., 2013. System Analysis, Mathematical Modeling, and Forecasting of the Development of the BRICS Countries. URSS, Moscow (in Russian).
- Allen, R.C., 2011. Global Economic History. Oxford University Press.
- Angel, D., Rock, M.T., 2009. Environmental rationalities and the development state in East Asia: prospects for a sustainability transition. *Technol. Forecast. Soc. Chang.* 76, 229–240.
- Aoki, M., Kim, H., Okuno-Fujiwara, V. (Eds.), 1997. The Role of Government in East Asian Economic Development: Comparative Institutional Analysis. Clarendon Press, Oxford.
- Arrighi, G., 1994. *The Long Twentieth Century: Money, Power, and the Origins of Our Times*. Verso, London.
- Arrighi, G., 2007. Adam Smith in Beijing: Lineages of the Twenty-First Century. Verso, London.
- Babones, S., Chase-Dunn, Christopher (Eds.), 2012. *Routledge Handbook of World-Systems Analysis: Theory and Research*. Routledge, London.
- Bacevich, A., 2002. *American Empire, The Realities and Consequences of U.S. Diplomacy*. Harvard University Press, Cambridge, MA.
- Barro, R., 1996. Democracy and growth. *J. Econ. Growth* 1, 1–27.
- Berger, P.L., 1986. *The Capitalist Revolution*. Basic Books, New York, NY.
- Berger, P.L., Hsiao, H.-H.M. (Eds.), 1988. *In Search of an East Asian Development Model*. Transaction Books, New Brunswick, NJ.
- Bernstein, R., Munro, Ross H., 1998. *The Coming Conflict with China*. Vintage Books, New York, New York.
- Berthelsen, J., 2011. Is this the China that can't? Asia Sentinel (18 May URL: http://www.asiasentinel.com/index.php?option=com_content&task=view&id=3200&Itemid=422).
- Bianchi, M., 1997. Testing for convergence: evidence from non-parametric multimodality tests. *J. Appl. Econ.* 12 (4), 393–409.
- Bloom, D., Sevilla, J., 2002. *The Demographic Dividend: A New Perspective on the Economic Consequences of Population Change*. RAND, Santa Monica, California.
- Bloom, D., Canning, D., Sevilla, J., 2001. Economic growth and the demographic transition. NBER Working Paper, 8685. National Bureau of Economic Research, Cambridge, MA.
- Boeing, P., Sandner, P., 2011. *The Innovative Performance of China's National Innovation System*. Frankfurt School of Finance & Management, Frankfurt am Main.

⁹ The level of economic inequality in China is even higher than in Russia (whereas this level in Russia is one of the highest in Europe — see, e.g., World Bank, 2014; SIPOV.GINI).

- Breslin, S., November 2011. The 'China model' and the global crisis: from Friedrich List to a Chinese mode of governance? *Int. Aff.* 87 (6), 1323–1343.
- Buchanan, P.J., 2002. *The Death of the West: How Dying Populations and Immigrant Invasions Imperil Our Country and Civilization*. St. Martin's Griffin, New York.
- Caggiano, G., Leonida, L., 2009. International output convergence: evidence from an autocorrelation function approach. *J. Appl. Econ.* 24, 139–162.
- Cai, F., 2012. Is there a "Middle-income Trap"? Theories, experiences and relevance to China. *China World Econ.* 20 (1), 49–61.
- Campbell, H., 2008. China in Africa: challenging US global hegemony. *Third World Q.* 29 (1), 89–105.
- Caselli, F., Esquivel, G., Lefort, F., 1996. Reopening the convergence debate: a new look at cross-country growth empirics. *J. Econ. Growth* 1 (3), 363–389.
- Chang, G.G., 2001. *The Coming Collapse of China*. Random House, New York, New York.
- Chase-Dunn, C., Anderson, E.N. (Eds.), 2005. *The Historical Evolution of World-Systems*. Palgrave, London.
- Chen, C., Chang, L., Zhang, Y.M., 1995. The role of foreign direct investment in China post-1978 economic development. *World Dev.* 23 (4), 691–703.
- Chen, H., Wakeland, Wayne, Yu, Jiang, 2012. A two-stage technology foresight model with system dynamics simulation and its application in the Chinese ICT industry. *Technol. Forecast. Soc. Chang.* 79, 1254–1267.
- Clark, G., 2008. *A Farewell to Alms: A Brief Economic History of the World*. Princeton University Press.
- Cox, D.G., Falconer, J., Stackhouse, B., 2009. *Terrorism, Instability, and Democracy in Asia and Africa*. Northeastern University Press, Boston, MA.
- Derviş, K., 2012. Convergence, interdependence, and divergence. *Financ. Dev.* 49, 10–14.
- Eichengreen, B., 2011. Slowing China. Project Syndicate (URL: <http://www.project-syndicate.org/commentary/eichengreen28/English>).
- Epstein, P., Howlett, P., Schulze, M.S., 2007. Trade, convergence, and globalisation: the dynamics of the international income distribution, 1950–1998. *Explor. Econ. Hist.* 44, 100–113.
- Fischer, J., 2010. China as a Superpower. Project Syndicate (03.10.2010. URL: <http://www.project-syndicate.org/commentary/china-as-a-superpower>).
- Frank, A.G., 1997. Asia comes full circle – with China as the 'Middle Kingdom'. *Humboldt J. Soc. Relat.* 76 (2), 7–20.
- Frank, A.G., 1998. *ReORIENT: Global Economy in the Asian Age*. University of California Press, Berkeley, CA.
- Friedman, J., Chase-Dunn, Christopher (Eds.), 2005. *Hegemonic Declines: Present and Past*. Paradigm Press, Boulder, CO.
- Fuller, D.B., 2014. Chip design in China and India: multinationals, industry structure and development outcomes in the integrated circuit industry. *Technol. Forecast. Soc. Chang.* 81, 1–10.
- Gerschenkron, A., 1952. *Economic backwardness in historical perspective. A Book of Essays*. Belknap Press of Harvard University Press, Cambridge, MA.
- Goldstein, J., 1988. *Long Cycles: Prosperity and War in the Modern Age*. Yale University Press, New Haven.
- Goldstein, A., Sep/Oct 2013. China's Real and Present Danger Now Is the Time for Washington to Worry Foreign Affairs. 92 (5), 136–144.
- Goldstone, J.A., 1991. *Revolution and Rebellion in the Early Modern World*. University of California Press, Berkeley, CA.
- Goldstone, J., 2002. Population and security: how demographic change can lead to violent conflict. *J. Int. Aff.* 56 (1), 11–12.
- Goldstone, J.A., 2008. Why Europe? The Rise of the West in Global History, 1500–1850. McGraw-Hill, New York.
- Goldstone, J.A., 2012. Divergence in cultural trajectories: the power of the traditional within the early modern. In: Porter, David (Ed.), 165–192 in *Comparative Early Modernities 1100–1800*. Palgrave-Macmillan, New York.
- Goldstone, J.A., Bates, R.H., Epstein, D.L., Gurr, T.R., Lustik, M.B., Marshall, M.G., Ulfelder, J., Woodward, M., 2010. A global model for forecasting political instability. *Am. J. Polit. Sci.* 54 (1), 190–208.
- Golley, J., Tyers, R., 2012. *China's Gender Imbalance and Its Economic Performance*. University of Western Australia, Perth.
- Grinin, L.E., 2012. Macrohistory and Globalization. Uchitel, Volgograd.
- Grinin, L.E., Korotayev, A.V., 2010. Will the global crisis lead to global transformations? 2. The coming epoch of new coalitions. *J. Glob. Stud.* 1 (2), 166–183.
- Grinin, L.E., Korotayev, A.V., 2011. The coming epoch of new coalitions: possible scenarios of the near future. *World Futur.* 67 (8), 531–563.
- Grinin, L., Korotayev, A., 2012. Does "Arab Spring" mean the beginning of World System reconfiguration? *World Futur.* 68/7, 471–505.
- Harkavy, Robert J., 1999. Long Cycle theory and the hegemonic powers' basing networks. *Polit. Geogr.* 18, 941–972.
- Harrold, P., 1995. China: foreign trade reform: now for the hard part. *Oxf. Rev. Econ. Policy* 11 (4), 133–146.
- He, Chuangqi (Ed.), 2010. *China Modernization Report Outlook (2001–2010)*. Peking University Press, Peking.
- Held, D., McGrew, A., Goldblatt, D., Perraton, J., 1999. *Global Transformations. Politics, Economics and Culture*. Stanford University Press, Stanford, CA.
- Herrington, Luke M., 2011. Why the Rise of China Will Not Lead to Global Hegemony. www.e-ir.info/2011/07/15/why-the-precious-rise-of-china-will-not-lead-to-global-hegemony/.
- Heshmati, A., Kumbhakar, S.C., 2011. Technical change and total factor productivity growth: the case of Chinese provinces. *Technol. Forecast. Soc. Chang.* 78, 575–590.
- Ho, Tsung-Wu, 2006. Income thresholds and growth convergence: a panel data approach. *Manch. Sch. Q.* 74 (2), 170–189.
- Hu, Angang, 2013. Backbone for further development. *China Daily* (12.07.2013. URL: http://usa.chinadaily.com.cn/opinion/2013-07/12/content_16765782.htm).
- Hu, M.-C., Phillips, F., 2011. Technological evolution and interdependence in China's emerging biofuel industry. *Technol. Forecast. Soc. Chang.* 78, 1130–1146.
- Hutchinson, M., 2013. China's rise to hegemony. *Asia Times* (25.07.2013. URL: http://www.atimes.com/atimes/Global_Economy/GECON-01-250613.html).
- Inoue, R., Kohama, H., Urata, S., 1993. *Industrial Policy in East Asia*. JETRO, Tokyo.
- Islam, N., 2003. What have we learnt from the convergence debate? *J. Econ. Surv.* 17 (3), 309–362.
- Ito, T., Krueger, A.O. (Eds.), 1995. *Growth Theories in Light of the East Asian Experience*. The University of Chicago Press, Chicago.
- Javers, E., 2009. Is China headed toward collapse? *Politico* (11.10.2009. URL: <http://www.politico.com/news/stories/1109/29330.html>).
- Jones, Ch., 1997. Convergence revisited. *J. Econ. Growth* 2 (2), 131–153.
- Kelly, R.E., 2014. What would chinese hegemony look like? *The Diplomat* (10.02.2014. URL: <http://thediplomat.com/2014/02/what-would-chinese-hegemony-look-like/>).
- Kennedy, Paul M., 1987. *The Rise and Fall of Great Powers 1500–2000*. Random House, New York.
- Kharas, H., Kohli, H., 2011. What is the middle income trap, why do countries fall into it, and how can it be avoided. *Glob. J. Emerg. Mark. Econ.* 3, 281–289.
- Kim, J.K., Yong Xiang, Jun, Lee, Sangho, 2009. The impact of IT investment on firm performance in China: an empirical investigation of the Chinese electronics industry. *Technol. Forecast. Soc. Chang.* 76, 678–687.
- Knutsen, T.L., 1999. *The Rise and Fall of World Orders*. Manchester University Press, Manchester.
- Kohli, H.A., Mukherjee, N., 2011. Potential costs to Asia of the middle income trap. *Glob. J. Emerg. Mark. Econ.* 3 (3), 291–311.
- Korotayev, A., 2005. A compact macromodel of World System evolution. *J. World Syst. Res.* 11 (1), 79–93.
- Korotayev, A., 2007. Compact mathematical models of World System development, and how they can help us to clarify our understanding of globalization processes. In: Modelski, G., Devezas, T., Thompson, W.R. (Eds.), *Globalization as Evolutionary Process: Modeling Global Change*. Routledge, London, pp. 133–160.
- Korotayev, A., Bogevolnov, J., 2010. Некоторые общие тенденции экономического развития Мир-Системы. In: Акаев, А.А., Коротаев, А.В., Малинецкий, Г.Г. (Eds.), *Прогноз и моделирование кризисов и мировой динамики*. Издательство ЛКИ/URSS, М, pp. 161–172 (C).
- Korotayev, A., de Munck, V., 2013. Advances in development reverse inequality trends. *J. Glob. Stud.* 4 (1), 105–124.
- Korotayev, A., Zinkina, J., 2011a. A demographic structural analysis of the Egyptian revolution. *Entelequia Rev. Interdiscip.* 13, 139–169.
- Korotayev, A., Zinkina, J., 2011b. Egyptian revolution: a demographic structural analysis. *Middle East Stud. Online J.* 2 (5), 57–95.
- Korotayev, A., Zinkina, J., 2014. On the structure of the present-day convergence. *Campus Wide Inf. Syst.* 31 (2), 41–57.
- Korotayev, A., Malkov, A., Khalitourina, D., 2006. *Introduction to Social Macrodynamics: Compact Macromodels of the World System Growth*. KomKniga/URSS, Moscow.
- Korotayev, A., Khalitourina, D., Малков, А.С., Божевольнов, Ю.В., Кобзева, С.В., Зинкина, Ю.В., 2010. *Законы истории. Математическое моделирование и прогнозирование мирового и регионального развития*. 3-е изд. ЛКИ/URSS, М (истр. и доп.).
- Korotayev, A., Zinkina, J., Bogevolnov, J., Malkov, A., 2011a. Global unconditional convergence among larger economies after 1998? *J. Glob. Stud.* 2 (2), 25–62.
- Korotayev, A., Zinkina, J., Kobzeva, S., Bogevolnov, J., Khalitourina, D., Malkov, A., Malkov, S., 2011b. A trap at the escape from the trap? Demographic-structural factors of political instability in Modern Africa and West Asia. *Clodynamics* 2 (2), 276–303.

- Kostoff, R.N., 2012. China/USA nanotechnology research output comparison—2011 update. *Technol. Forecast. Soc. Chang.* 79, 986–990.
- Kostoff, R.N., Bhattacharya, Sujit, Pecht, Michael, 2007a. Assessment of China's and India's science and technology literature — introduction, background, and approach. *Technol. Forecast. Soc. Chang.* 74, 1519–1538.
- Kostoff, Ronald N., Briggs, Michael B., Rushenberg, Robert L., Bowles, Christine A., Icenhour, Alan S., Nikodym, Kimberley F., Barth, Ryan B., Pecht, Michael, 2007b. Chinese science and technology — structure and infrastructure. *Technol. Forecast. Soc. Chang.* 74 (2007), 1539–1573.
- Kostoff, R.N., Briggs, Michael B., Rushenberg, Robert L., Bowles, Christine A., Pecht, Michael, Johnson, Dustin, Bhattacharya, Sujit, Icenhour, Alan S., Nikodym, Kimberly, Barth, Ryan B., Dodbele, Simha, 2007c. Comparisons of the structure and infrastructure of Chinese and Indian science and technology. *Technol. Forecast. Soc. Chang.* 74, 1609–1630.
- Kuijs, L., 2012. Economic Growth Patterns and Strategies in China and India: Past and Future. Fung Global Institute, Hong Kong.
- Lai, Hailong, 2011. Китай способен ассимилировать либеральные ценности? Взгляд 21 марта URL: <http://www.vzru/opinions/2011/3/21/477349.html>.
- Lai, Kee-hung, Christina, W.Y., Wong, T.C.E., Cheng, 2012. Ecological modernisation of Chinese export manufacturing via green logistics management and its regional implications. *Technol. Forecast. Soc. Chang.* 79, 766–770.
- Lau, L.J., Qian, Y., Roland, G., 2000. Reform without losers: an interpretation of China's dual-track approach to transition. *J. Polit. Econ.* 108 (1), 120–143.
- Lee, C.H., Spring 2002. The state and institutions in East Asian economic development: the past and the future. *J. Korean Econ.* 3 (1), 1–17.
- Lee, K., Hashem Pesaran, M., Smith, R., 1997. Growth and convergence in a multi-country empirical stochastic Solow model. *J. Appl. Econ.* 12 (4), 357–392.
- Li, H., Zhou, Li-An, 2005. Political turnover and economic performance: the incentive role of personnel control in China. *J. Public Econ.* 89, 1743–1762.
- Liew, L., 2001. Marketization, democracy and economic growth in China. In: Chowdhury, A., Iyanatul, I. (Eds.), *Beyond the Asian Crisis: Pathways to Sustainable Growth*. Edward Elgar, Northampton, pp. 299–323.
- Lin, J.Y., 2003. Development strategy, viability and economic convergence. *Econ. Dev. Cult. Chang.* 53 (2), 277–308.
- Lin, J.Y., 2011. *Demystifying the Chinese Economy*. Cambridge University Press, Cambridge.
- Lin, J.Y., Cai, F., Li, Z., 2003. *The China Miracle: Development Strategy and Economic Reform*. Chinese University Press, Hong Kong SAR, China.
- Liu, F., Sun, Y., 2009. A comparison of the spatial distribution of innovative activities in China and the U.S. *Technol. Forecast. Soc. Chang.* 76, 797–805.
- Liu, X., Burridge, P., Sinclair, P.J.N., 2002. Relationships between economic growth, foreign direct investment and trade: evidence from China. *Appl. Econ.* 34 (11), 1433–1440.
- Long, Cheng, Ping, Yang, May 2012. China model in globalization process. *J. Glob. Stud.* 3 (1), 67–78.
- Ma, Z., Lee, Y., Chen, C.-F.P., 2009. Booming or emerging? China's technological capability and international collaboration in patent activities. *Technol. Forecast. Soc. Chang.* 76, 787–796.
- MacKay, B., Tambeau, P., 2013. A structuration approach to scenario praxis. *Technol. Forecast. Soc. Chang.* 80, 673–686.
- Mandelbaum, M., 2005. *The Case for Goliath: How America Acts as the World's Government in the Twenty-First Century*. Public Affairs, New York, NY.
- Mason, A. (Ed.), 2001. *Population Change and Economic Development in Eastern and South-eastern Asia: Challenges Met, Opportunities Seized*. Stanford University Press, Stanford, CA.
- Mason, A., 2007. Demographic transition and demographic dividends in developed and developing countries. *Proceedings of the United Nations Expert Group Meeting on Social and Economic Implications of Changing Population Age Structures Mexico City, 31 August–2 September 2005*. United Nations, New York, NY, pp. 81–101.
- Miller, C.R., Richard, Brian, Arora, Sumesh, 2011. Alternate signs of life: the growth of biotechnology industries in Shanghai and Bangalore. *Technol. Forecast. Soc. Chang.* 78, 565–574.
- Modelske, G., 1987. *Long Cycles in World Politics*. Macmillan, London.
- Modelske, G., 1996. Evolutionary paradigm for global politics. *Int. Stud. Q.* 40, 321–342.
- Modelske, G., Thompson, W.R., 1996. *Leading Sectors and World Power: The Coevolution of Global Economics and Politics*. University of South Carolina Press, Columbia, SC.
- Moller, H., 1968. Youth as a force in the modern world. *Comp. Stud. Soc. Hist.* 10, 238–260.
- Motoyama, Y., Cao, Cong, Appelbaum, Richard, 2014. Observing regional divergence of Chinese nanotechnology centers. *Technol. Forecast. Soc. Chang.* 81, 11–21.
- Mugomba, L., Bekker, D., 2013. China, the future hegemon of the global economy? Paper presented at the ESSA 2013 Biennial Conference, University of the Free State, Bloemfontein, South Africa, September 25–27, 2013.
- National Intelligence Council, 2008. *Global Trends 2025: A Transformed World*. National Intelligence Council, Washington, DC.
- NIC 2012 – National Intelligence Council, 2012. *Global Trends 2030: Alternative Worlds* URL: www.dni.gov/nic/globaltrends.
- Nye Jr., J.S., 2002. *The Paradox of American Power: Why the World's Only Superpower Can't Go It Alone*. Oxford University Press, New York, NY.
- O'Brien, F.A., Meadows, M., 2013. Scenario orientation and use to support strategy development. *Technol. Forecast. Soc. Chang.* 80, 643–656.
- Okuda, S., 1997. Industrialization policies of Korea and Taiwan and their effects on manufacturing productivity. *Dev. Econ.* XXXV (4), 358–381.
- Perkins, D.H., 1986. *China: Asia's Next Economic Giant?* University of Washington Press, Seattle.
- Perkins, D.H., 1988. Reforming China's economic system. *J. Econ. Lit.* XXVI (2), 601–645.
- Perkins, D.H., 2013. *East Asian Development: Foundations and Strategies*. Harvard University Press, Cambridge.
- Polterovich, V.M., Popov, V.V., 2007. Democratization and the economic growth. *Obschestvenniye nauki i sovremennost*, 2, pp. 13–27 (In Russian (Полтерович В.М., Попов В.В., 2007. Демократизация и экономический рост. Общественные науки и современность 2: 13–27)).
- Pomeranz, K., 2000. *The Great Divergence: China, Europe, and the Making of the Modern World Economy*. Princeton University Press.
- Pomfret, R., 1997. Growth and transition: why has China's performance been so different. *J. Comp. Econ.* 25 (3), 422–440.
- Poston, D.L., Conde, E., DeSalvo, B., 2011. China's unbalanced sex ratio at birth, millions of excess bachelors and societal implications. *Vulnerable Child. Youth Stud.* 6/4, 314–320.
- Qian, Y., June 9–11 1999. The Process of China's market transition (1978–1998): evolutionary, historical and institutional perspectives. Paper prepared for the Journal of Institutional and Theoretical Economics Symposium on “Big-Bang Transformation of Economic Systems as a Challenge to New Institutional Economics” (Wallerfangen/Saar, Germany).
- Qian, Y., Roland, G., 1998. Federalism and the soft budget constraint. *Am. Econ. Rev.* 88 (5), 1143–1162.
- Quah, D.T., 1996. Empirics for economic growth and convergence. *Eur. Econ. Rev.* 40 (6), 1353–1375.
- Ramo, J., 2005. The Beijing consensus. 2005. In: Ping, Huang, Zhiyuan, Cui (Eds.), *China and Globalization: Washington Consensus or Beijing Consensus*. Social Science Academic Press, Beijing, pp. 1–62.
- Renwick, N., 2000. *America's World Identity. The Politics of Exclusion*. Macmillan Press, Basingstoke.
- Rodrik, D., 2013. Unconditional convergence in manufacturing. *Q. J. Econ.* 127, 165–204.
- Sadik, J., 2008. Technology adoption, convergence, and divergence. *Eur. Econ. Rev.* 52, 338–355.
- Sala-i-Martin, X.X., 2006. The world distribution of income: falling poverty and ... convergence, period. *Q. J. Econ.* 121, 351–397.
- Selishchev, A.S., Selishchev, N.A., 2004. Chinese Economy in the 21st Century. Piter, St Petersburg (In Russian (Китайская экономика в XXI веке. СПб.: Питер)).
- Shan, J., 2002. A VAR approach to the economics of FDI in China. *Appl. Econ.* 7 (34), 885–893.
- Solow, R.M., Feb., 1956. A contribution to the theory of economic growth. *Q. J. Econ.* 70 (1), 65–94.
- Spence, M., 2011. *The Next Convergence. The Future of Economic Growth in a Multispeed World*. Farrar, Straus and Giroux, New York.
- Steenhof, P.A., Fulton, W., 2007a. Scenario development in China's electricity sector. *Technol. Forecast. Soc. Chang.* 74, 663–681.
- Steenhof, P.A., Fulton, W., 2007b. Factors affecting electricity generation in China: current situation and prospects. *Technol. Forecast. Soc. Chang.* 74, 779–797.
- STRATFOR, 2010. *Decade Forecast: 2010–2020*. STRATFOR, Austin, TX.
- The World Bank and the Development Research Center of the State Council of the People's Republic of China, 2012. *China 2030. Building a Modern, Harmonious, and Creative High-Income Society*. International Bank for Reconstruction and Development, Washington, DC.
- Thompson, W.R., 1988. *On Global War: Historical-Structural Approaches to World Politics*. University of South Carolina Press, Columbia, SC.
- Thompson, W.R., 2010. The lead economy sequence in world politics (Sung China to the United States): selected counterfactuals. *J. Glob. Stud.* 1, 3–16.
- Todd, E., 2003. *After the Empire: The Breakdown of American Order*. Columbia University Press, New York.
- Tsai, B.-H., Li, Y., 2009. Cluster evolution of IC industry from Taiwan to China. *Technol. Forecast. Soc. Chang.* 76, 1092–1104.

- Tseng, C.-Y., 2009. Technological innovation and knowledge network in Asia: evidence from comparison of information and communication technologies among six countries. *Technol. Forecast. Soc. Chang.* 76, 654–663.
- UN Population Division, 2014. Population Division Database URL: <http://www.un.org/esa/population>.
- Unger, J., Chan, A., Jan., 1995. China, corporatism, and the East Asian model. *Aust. J. Chin. Aff.* (33), 29–53.
- United Nations Development Program, 2002. *Human Development Report 2002: Deepening democracy in a fragmented world*. UNDP, New York.
- Villaverde, J., Maza, A., 2011. Globalization, growth, and convergence. *World Econ.* 36 (6), 952–971.
- Wallerstein, I., 1974, 1980, 1988. *The Modern World-System. 3*. Academic Press, New York, NY.
- Wallerstein, I., 1987. World-systems analysis. In: Giddens, A., Turner, J. (Eds.), *Social Theory Today*. Polity Press, Cambridge, UK, pp. 309–324.
- Wallerstein, I., 2003. *The Decline of American Power. The U.S. in a Chaotic World*. New Press, New York, London.
- Wallerstein, I., 2004. *World-Systems Analysis: An Introduction*. Duke University Press, Durham, NC.
- Wang, H.H., 2010. Myth of China as a Superpower URL: <http://helenhwang.net/2010/04/myth-of-china-as-a-superpower>.
- Wilkinson, A., Kupers, R., Mangalagiu, D., 2013. How plausibility-based scenario practices are grappling with complexity to appreciate and address 21st century challenges. *Technol. Forecast. Soc. Chang.* 80, 699–710.
- WIPO = World Intellectual Property Organization. 2014. Statistics on Patents. Patent Grants by Patent Office by resident and non-resident. URL: http://www.wipo.int/export/sites/www/ipstats/en/statistics/patents/xls/wipo_pat_grant_from_1883_table.xls. Accessed on January 21, 2014.
- Wong, C.-Y., Goh, K.-L., 2014. Catch-up models of science and technology: a theorization of the Asian experience from bi-logistic growth trajectories. *Technol. Forecast. Soc. Chang.* 81.
- World Bank, 2014. World Development Indicators Online. World Bank, Washington, DC (Electronic version. URL: <http://data.worldbank.org/indicator>).
- Wright, G., Bradfield, R., Cairns, G., 2013a. Does the intuitive logics method – and its recent enhancements – produce “effective” scenarios? *Technol. Forecast. Soc. Chang.* 80, 631–642.
- Wright, G., Cairns, George, Bradfield, R., 2013b. Scenario methodology: new developments in theory and practice. *Technol. Forecast. Soc. Chang.* 80, 561–565.
- Xiang, X.-Y., Cai, Hong, Lam, Shui, Pei, Yun-Long, 2013. International knowledge spillover through co-inventors: an empirical study using Chinese assignees' patent data. *Technol. Forecast. Soc. Chang.* 80, 161–174.
- Yu, M., 2013. Never Mind the Fiscal Cliff, China is Headed For a 'Real' Cliff URL: <http://www.theepochtimes.com/n2/china-news/never-mind-the-fiscal-cliff-china-is-headed-for-a-real-cliff-332318.html>.
- Yueh, L., 2013. What drives China's growth? *Natl. Inst. Econ. Rev.* (223), R4–R15.
- Yusuf, S., Altaf, Anjum, Nabeshima, Kaoru (Eds.), 2004. *Global Production Networking and Technological Change in East Asia*. Oxford University Press, New York.
- Yusuf, S., Nabeshima, Kaoru, Perkins, D.H. (Eds.), 2006. *Under New Ownership: Privatizing China's State-Owned Enterprises*. Stanford University Press, Stanford, CA.
- Zakaria, F., 2009. *The Post-American World*. Norton, New York, NY.
- Zhang, M.Y., Gao, J., 2011. The take-off of an interactive innovation: evidence from China. *Technol. Forecast. Soc. Chang.* 78, 1115–1129.
- Zhang, Rui, Sun, Kai, Delgado, Michael S., Kumbhakar, Subal C., 2012. Productivity in China's high technology industry: regional heterogeneity and R&D. *Technol. Forecast. Soc. Chang.* 79, 127–141.
- Zitan, G., 2013. The Truth About China's GDP Growth URL: <http://www.theepochtimes.com/n2/china-news/the-truth-about-chinas-gdp-growth-334624.html>.

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